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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/525,176	03/14/2000	Savvas Vasileiadis		7655

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EXAMINER
LANGEL, WAYNE A

ART UNIT 1754	PAPER NUMBER
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DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/525176

Applicant(s)

Vasileiadis et al

Examiner

Langel

Group Art Unit

1754

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 134-181 is/are pending in the application.
- ☐ Claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 134-181 is/are allowed.
- ☐ Claim(s) _____ is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Claims 134-181 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is indefinite as to whether the claims recite a process or an apparatus, since the preambles of independent claims 134, 152 and 170 recite a "process . . .", but the main body of the claims recites "a far outer impermeable hollow tubular cylinder nesting two more concentric permeable tubular cylinders . . .", which would be an apparatus limitation. It is not clear as to which process steps, if any, would be required by the claims. In claim 134, line 10; claim 152, lines 9 and 10; and claim 170, lines 9 and 10, the antecedent of "the membrane" is indefinite. It is indefinite as to whether "the membrane" refers to the "next inner membrane" or the "most inner membrane". The claims are further indefinite in failing to positively recite many of the limitations. For example, the claims recite that the most inner permeable cylinder is "to be filled" with a reforming catalyst, that the catalyst is "to be in pellet or particle form", that the hydrogen product is "to be continuously removed", that the remaining reaction species are "to partially permeate", that the permeated species are "to be diluted by an inert carrier gas", that hydrogen only is "to be continuously removed", that the next inner membrane is "to be made from a metal or non-porous inorganic material", and that the

pure hydrogen is "to permeate" through the next inner membrane, as opposed to the most inner permeable cylinder actually being filled with the reforming catalyst, the catalyst actually being in pellet or particle form, the hydrogen product actually being continuously removed, the remaining reaction species actually partially permeating, the permeated species actually being diluted by an inert carrier gas, the hydrogen actually being continuously removed via permeation, the next inner membrane actually being made from a metal or non-porous inorganic material, and the pure hydrogen actually permeating through the next inner membrane. The claims should be amended to positively recite such limitations.

The other references are made of record for showing steam reforming of hydrocarbons wherein the hydrogen is separated by passing through a hydrogen-permeable membrane.

This application apparently discloses allowable subject matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (571) 272-1353. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can

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be reached on (703) 308-3837. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

December 22, 2003

Wayne A. Langel
WAYNE A. LANGEL
PRIMARY EXAMINER